National Institute of Environmental Health Sciences

Global warming and vector-borne infectious diseases

Author(s): Kabayashi M, Komagata O, Nihei N
Year: 2008
Journal: Journal of Disaster Research. 3: 105-112

Abstract:

Vector-borne diseases result from infections transmitted to humans by blood-feeding arthropods such as mosquitoes, ticks, and fleas. Such cold-blooded animals are influenced by environmental change. A recent IPCC report clearly showed that the emission of greenhouse gases has already changed world climates. Heat waves in Europe, rises in global mean sea level, summer droughts and wild fires, more intense precipitation, and increasing numbers of large cyclones and hurricanes may be typical example of extreme climate phenomena related to global warming. High temperatures may increase survival among arthropods, depending on their vector, behavior, ecology, and valuable factors, and temperate zone warming may accelerate the spread of mosquitoes such as Aedes albopictus. TheMIROK (K1)Model clearly shows a northern limit for Ae. albopictus, particularly in northern Honshu in 2035 and southern and middle Hokkaido Island in 2100 in Japan. The spread of the mosquito vector through global used-tire trading in recent decades to Africa, the Mideast, Europe, and North and South America caused an outbreak of Chikungunya fever in north Italy in 2007. Global warming, extreme climate change, changing physical distribution, and an increase in oversea travel are also expected to influence the epidemiology of vector-borne infectious diseases.

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Unspecified Exposure

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Vectorborne Disease

Vectorborne Disease: General Vectorborne

Resource Type:

format or standard characteristic of resource

Review

Timescale:

time period studied

Time Scale Unspecified